Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for determining the frequency response of an electrooptical component ~~(60)~~ within a predefined frequency band~~, in which~~ comprising the steps of:

~~- generating optical pulses having at a first optical carrier frequency and having a predefined pulse frequency (fp) are generated,~~

~~- the driving an electrooptical component (60) is driven with an a predefined electrical measurement signal, said (Smeas) having a predefined measurement frequency (fmeas) in such a way that an optical output signal (Sout) - modulated with the measurement frequency (fmeas) - having a predefined second optical carrier frequency is formed, the measurement frequency (fmeas) being an integral multiple of the pulse frequency (fp) plus a predefined frequency offset (Δf),~~

~~- the pulses and the output signal (Sout) are subjected to a joint frequency mixing and, from the mixed products formed during the frequency mixing, at least one mixed product (M") is detected whose modulation frequency corresponds to the predefined frequency offset (Δf),~~

~~- the frequency behavior of the electrooptical component (60) at the measurement frequency (fmeas) is determined on the basis of the intensity, in~~

~~particular the power, the amplitude or the root-mean-square value, of the detected mixed product (M"), and~~

- ~~the frequency behavior of the electrooptical component (60) is determined in the manner described for all measurement frequencies (fmeas) which correspond to an integral multiple of the pulse frequency (fp) plus the predefined frequency offset (Δf) and which lie within the predefined frequency band.~~
- generating optical pulses at a first carrier frequency and a predefined pulse frequency;
- driving an electrooptical component with a predefined electrical measurement signal, said predefined electrical measurement signal having a measurement frequency at an integral multiple of said predefined pulse frequency and including an additional predefined frequency offset;
- generating an electrooptical component output signal modulated at said measurement frequency, having a predefined second optical carrier frequency;
- frequency mixing said optical pulses and said electrooptical component output signal to form a plurality of mixed products
- detecting at least one mixed product having a modulation frequency which corresponds to said predefined frequency offset;
- determining the frequency behavior of said electrooptical component at said measurement frequency based on the intensity of the detected mixed product; and

- repeating the step of determining the frequency behavior of said electrooptical component at all measurement frequencies corresponding to $n(f_p)+\Delta f$ which lie within said predefined frequency band, where $n(f_p)$ is an integral multiple of said pulse frequency and Δf is said predefined frequency offset.

2. (Currently Amended) The method as claimed in claim 1, ~~characterized in that, from the mixed products,~~ wherein the detecting step comprises detecting exclusively those mixed products (M") whose optical carrier frequency is ~~are detected which have the~~ a summation frequency formed from ~~the~~ a first and second optical carrier frequencies ~~as optical carrier frequency~~.

3. (Currently Amended) The method as claimed in claim 1, ~~characterized in that, from the mixed products,~~ wherein the detecting step comprises detecting exclusively those mixed products whose optical carrier frequency is ~~are detected which have the~~ a difference frequency formed from ~~the~~ a first and second optical carrier frequencies ~~as optical carrier frequency~~.

4. (Previously Presented) The method as claimed in claim 1, characterized in that the predefined frequency offset (Δf) has a positive or a negative magnitude.

5. (Currently Amended) The method as claimed in claim 1, further comprising determining ~~characterized in that the~~ spectral line strengths of the optical pulses ~~are determined~~ before~~hand~~ the generating step and at least one of the

determining steps further comprises taking the spectral line lengths into account ~~they are taken into account when determining the frequency behavior of the electrooptical component (60)~~.

6. (Currently Amended) The method as claimed in claim 5, ~~characterized in that when determining the frequency behavior of the electrooptical component (60), from the spectral line strengths of the optical pulses that have been determined beforehand,~~ wherein the taking into account step uses the spectral line strength ~~of in each case that spectral line~~ whose spectral line frequency corresponds to ~~the~~ a difference frequency between the ~~respective~~ measurement frequency (fmeas) and the predefined frequency offset (Δf) ~~is taken into account~~.

7. (Currently Amended) The method as claimed in claim 1, ~~characterized in that the~~ further comprising determining spectral line strengths ~~determined~~ before~~hand~~ the generating step ~~are determined~~ by means of ~~the~~ a spectral power of ~~the~~ spectral lines of the optical pulses ~~being determined beforehand, in particular by means of an autocorrelator~~.

8. (Currently Amended) The method as claimed in claim 6, ~~characterized in that, for the purpose of determining the frequency behavior of the electrooptical component (60),~~ wherein at least one of the determining steps further comprises dividing a mixed product intensity value (Im*Dm) specifying ~~the~~ an intensity of ~~the~~ a selected mixed product (M") ~~is divided~~ by a spectral line value (Im) - specifying the

spectral line strength of the spectral line of the optical pulses which is associated with the selected mixed product (M") – and forming ~~with formation of~~ a frequency response value (Dm) of the electrooptical component (60).

9. (Currently Amended) The method as claimed in claim 1, ~~characterized in that~~ further comprising forming optical mixed products (M) using a nonlinear element (40) through which the optical pulses and the optical output signal (Sout) are radiated ~~is used for the purpose of forming the optical mixed products (M)~~.

10. (Currently Amended) The method as claimed in claim 1, ~~characterized in that~~ further comprising using a 2-photon detector ~~is used~~ for ~~the purpose of forming and/or~~ detecting the optical mixed products.

11. (Currently Amended) The method as claimed in claim 1, ~~characterized in that~~ further comprising using an optical rectifier~~, in particular a nonlinear crystal, is used~~ for ~~the purpose of~~ forming ~~and/or detecting~~ the optical mixed products.

12. (Currently Amended) The method as claimed in claim 1, ~~characterized in that~~ wherein the forming step comprises calculating the measurement frequency ~~is calculated~~ in accordance with ~~the following determination equation~~:

fmeas = m * fp + Δf

where fmeas denotes the measurement frequency, Δf denotes the frequency offset and fp denotes the pulse frequency.

13. (Currently Amended) The method as claimed in claim 1, <u>further comprising predefining</u> ~~characterized in that~~ the predefined frequency offset (Δf)~~ is predefined~~ in a variable fashion.

14. (Currently Amended) The method as claimed in claim 1, ~~characterized in that the frequency response of~~ <u>further comprising forming</u> an electrooptical component (60) ~~formed~~ from a light source (61) and a downstream electrooptical modulator (62) ~~is determined~~.

15. (Currently Amended) The method as claimed in claim 1, ~~characterized in that the~~ <u>further comprising simultaneously determining a</u> frequency response of an optoelectrical transducer (400) ~~is simultaneously determined~~ within ~~the~~ <u>a</u> predefined frequency band by

- radiating the optical output signal (Sout) generated by the electrooptical component (60) into the optoelectrical transducer (400),
- measuring an electrical transducer signal (S2) generated by the optoelectrical transducer (400) with formation of a transducer measured value, and
- using the transducer measured value and the measured frequency response of the electrooptical component (60) to determine the frequency response of the optoelectrical transducer (400).

16. (Currently Amended) The method as claimed in claim 15, ~~characterized in that~~ wherein the determining step further comprises ~~the frequency response of the optoelectrical transducer (400) is determined by~~ dividing the transducer measured value by a frequency response value (Dm) of the electrooptical component (60).

17. (Currently Amended) The method as claimed in claim 1, ~~characterized in that the pulse frequency (fp) of the optical pulses is generated~~ wherein the generating step comprises generating by means of a first high-frequency source, ~~in particular a pulse generator (10),~~ and generating the measurement signal (Smeas) ~~is generated~~ by means of a second high-frequency source, ~~in particular a sine-wave generator (70),~~ the two high-frequency sources (10, 70) being coupled~~, in particular coupled in phase-locked fashion~~.

18. (Currently Amended) The method as claimed in claim 1, ~~characterized in that the~~ further comprising measuring a phase response of the electrooptical component (60) ~~is additionally measured~~.

19. (Currently Amended) The method as claimed in claim 18, ~~characterized in that~~ further comprising

- generating a phase signal (PL1) ~~is generated~~ which specifies ~~the~~ a phase angle ($\Delta\Phi 1$) between ~~the~~ a drive signal (SA) of a pulsed laser (20) configured

to generate ~~generating~~ the optical pulses and the electrical measurement signal,

- measuring ~~the~~ a phase angle between the generated phase signal (PL1) and ~~the~~ a phase angle of the detected mixed product (M") ~~is measured~~ for each of the measurement frequencies (fmeas) in each case with formation of a phase measured value ($\Delta\Phi 2$).

20. (Currently Amended) The method as claimed in claim 18, ~~characterized in that~~ further comprising measuring a ~~the~~ phase response of ~~the~~ an optoelectrical transducer (400) ~~is additionally measured~~.

21. (Previously Presented) An arrangement having a pulsed laser (20), an electrooptical component (60) and a measuring device (100) having an evaluation device (120), which is suitable for carrying out a method as claimed in claim 1.

22. (New) The method as claimed in claim 1, wherein the intensity of the detected mixed product is at least one of an amplitude or root mean square value of power.

23. (New) The method as claimed in claim 7, wherein the determining spectral line strengths step further comprises using an autocorrelator.

24. (New) The method as claimed in claim 11, wherein the optical rectifier is a nonlinear crystal.

25. (New) The method as claimed in claim 17, wherein the two high-frequency sources are coupled in phase-locked fashion.